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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,563

06/12/2006

Hiroyuki Nakata

NGB-40647

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52054

7590

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EXAMINER

NGUYEN, HUNG D

ART UNIT

PAPER NUMBER

4118

NOTIFICATION DATE

DELIVERY MODE

03/05/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/582,563	Applicant(s) NAKATA ET AL.	
	Examiner HUNG NGUYEN	Art Unit 4118	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/02/2008, 06/12/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - Par. 7 lines 4-5 of the Specification recites “a welding chip 106” which appears to be a misspelling of the word “tip”.
 - Par. 21 line 1 of the Specification recites “whey” which appears to be a misspelling of the word “why”.
 - Par. 32 line 2 of the Specification recites “torch velocity commence TVC 201” which appears to be a misspelling of the word “command”
 - Par. 33 line 3 of the Specification recites “whey” which appears to be a misspelling of the word “why”.
 - Par. 140 line of the Specification recites “a welding chip 6” which appears to be a misspelling of the word “tip”.
 - Par. 140 line 5 of the Specification recites “ark 8” which appears to be a misspelling of the word “arc”.
 - Par. 152 line 1 of the Specification recites “whey” which appears to be a misspelling of the word “why”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 4, it is unclear “the system adapting a method of detecting collisions” in the apparatus claim in line 3. It is also unclear how the system “detecting the external force” in line 6. It is also unclear how the system “judging” that an arm has received the external force in line 10. It also unclear how the system “increasing the threshold for detection” line 14.

Claim Rejections - 35 USC § 102

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 2, 6, 7 are rejected under 35 U.S.C. 102(a) as being anticipated by Uesono et al. (JP Pub. 2002-205169).

5. Regarding claims 1 and 6, Uesono et al. discloses a welding system and a welding method including: a wire feeding unit WM (Fig. 2) which feeds a welding wire 1 (Fig. 2) to a welding torch 4 (Fig. 2); an actuator RM (Fig. 2) which holds the welding torch 4 (Fig. 2) and moves the welding torch; a controller RC (Fig. 2) which has a position control system and drive-controls the actuator RM (Fig. 2); and a welding power supply PS (Fig. 2) unit which applies weld output between a workpiece 2 (Fig. 2) and the welding wire 1 (Fig. 2), wherein the welding torch is moved by the actuator in a direction separating from the workpiece thereby to control the velocity of the welding wire for the workpiece; and the controller includes, separately from the position control

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system, a dedicated separation control MC (Fig. 3) system which moves the actuator in the direction where the welding torch is separated from the workpiece (Par. 2 and 3).

6. Regarding claims 2 and 7, Uesono et al. discloses the separation control system MC—Motion control circuit (Fig. 3) performs feedforward control (Par. 11).

7. Regarding claims 3 and 8, Uesono et al. discloses the separation control system MC—Motion control circuit (Fig. 3) is used only when the welding torch is moved in the direction separating from the workpiece (Par. 27 describes an operation the backing movement of the welding torch after making contact with the workpiece 2).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4-5 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uesono et al. (JP Pub. 2002-205169) in view of Hosoi et al. (JP Pat. 411070490).

10. Regarding claims 4 and 9, as best understood, Uesono et al. discloses all the claimed features except for the welding system includes a multi-articulated robot driven through a reduction gear by a motor, the system adapting a method of detecting collision of the multi-articulated robot comprising the steps of: sensor-less detecting external force due to collision by subtracting a kinetic torque obtained by an inverse kinetic calculation of a robot from a torque outputted to the reduction gear by the motor;

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judging that an arm has received the external force in case that the detected value of the external force is greater than a predetermined threshold, and increasing the threshold for detection of collision to lower collision detecting sensibility in case that a command acceleration of the robot operation is greater than a predetermined value. However, Hosoi et al. teaches an industrial robot has a structure where a drive shaft motor for driving a joint is coupled to an arm by way of reduction gear (Abstract) without using any special detector for collision detection (Par. 3, Lines 4-5). By calculating the disturbance torque that the motor received and subtract to the default disturbance torque to determine the collision (Par. 9-10). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Uesono et al. to include the collision detecting method, as taught by Hosoi et al., for the purpose of quickly detecting the collision thereby preventing damage the robot arm.

11. Regarding claims 5 and 10, as best understood, Uesono et al. discloses all the claimed features except for the threshold for detection of collision is increased, and this state where the threshold is increased is kept for the predetermined time in case that the command acceleration of the robot operation is greater than the predetermined value. However, Hosoi et al. teaches the collision detection by setup the first default value and second default value of the disturbance torque. The disturbance torque that the robot received exceed the first default value is too small then the second default value will be compared to detect the collision for the case when the working speed of the robot arm is quick (Par. 11-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Uesono et al. to

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include the collision detection method by comparing the second default value (same as detection threshold is hold longer for comparing), as taught by Hosoi et al., for the purpose of preventing immature collision as the robot arm moving too quick or the obstruction is soft.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shimogama (US Pat. 5,412,175) teaches the method of operating an arc welding apparatus. Nakano et al. (US Pat. 4,538,047) teaches a method of controlling robotic automatic welding apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG NGUYEN whose telephone number is (571)270-7828. The examiner can normally be reached on Monday-Friday, 7:30AM-5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quang Thanh can be reached on (571)272-4982. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quang D. Thanh/
Supervisory Patent Examiner, Art
Unit 4118

/HUNG NGUYEN/
Examiner, Art Unit 4118